

Type material of Clausiliidae door snails from Philippe Dautzenberg in the collection of the Museum of New Zealand Te Papa Tongarewa

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ABSTRACT: A small collection of Vietnamese door snails (family Clausiliidae) was recently (re)discovered in the malacological collection of the Museum of New Zealand Te Papa Tongarewa (NMNZ). This material previously belonged to the famed shell collection of Belgian malacologist Philippe Dautzenberg (1849–1935) and was eventually acquired by, or donated to, NMNZ in the first half of the twentieth century. The collection comprises type material of 19 taxa (species and subspecies) and possible type material of one taxon, alongside non-type material of several additional species. It is presented here in the form of an annotated and illustrated catalogue.

KEYWORDS: Philippe Dautzenberg, Arthur Bavay, Victor Demange, Louis Messenger, Gastropoda, collections, pulmonates, type material, snails, Vietnam.

Introduction

During ongoing work to reorganise the terrestrial and freshwater gastropod collection of the Museum of New Zealand Te Papa Tongarewa (NMNZ), Wellington, New Zealand, a small but important collection of land snails was discovered. This material belonged to the famed shell collection of malacologist Philippe Dautzenberg and was eventually acquired by, or donated to, NMNZ in circumstances that remain largely unknown.

Philippe Dautzenberg was born in Brussels in 1849 and moved to Paris in 1867 to work in the Braquenié tapestry company. He married one of the owner's daughters, Marie Gabrielle Braquenié, succeeded his father-in-law Henri Charles as director and made his fortune in the company. This allowed him to build up a huge shell collection over the years, which at the turn of the century was already considered the most important private malacological collection in the world, both in terms of the diversity of species and the quality of specimens. When Dautzenberg died in 1935, his collection contained about 40,000 species

and was bequeathed to the Belgian state. It is now housed in the Royal Belgian Institute of Natural Sciences in Brussels, together with Dautzenberg's library and archives (Lamy 1935; Duchamps 1986, 1989).

The small Dautzenberg collection at NMNZ is composed almost exclusively of Vietnamese door snails (family Clausiliidae), although one species from Japan and one from China are also present. Most material was obtained by Louis G.M. Messenger (1852–1915), who served in the French army and was stationed for many years in the French colony of Indochina (Breure & Páll-Gergely 2019). Further material was collected by Victor Demange (1870–1940), a trader who lived for many years in Hanoi (Breure & Ablett 2016). The specimens mostly represent species and subspecies described by Dautzenberg, in collaboration with Arthur R.J.B. Bavay (1840–1923), a French pharmacist and malacologist (Roth & Clover 1973). The labels of all NMNZ lots bear the indication 'From the type series' or similar, so they are potential candidates to be type material of these clausiliid taxa. We investigate this matter in our article and provide a list of all Dautzenberg material housed at NMNZ.

Material and methods

The small Dautzenberg collection housed at NMNZ contains 51 lots. Unfortunately, its history remains largely uncertain. According to the internal collection registers, the collection was received on 4 December 1935. The register points to exactly 51 lots of *Clausilia*, so we can assume that none of the original material has been lost.

About one-third of the lots had already been entered in the NMNZ database, which means their original labels have been discarded and substituted with new ones (either handwritten or printed), an unfortunate practice in NMNZ until relatively recently. However, the original labels survived from the unregistered lots (Fig. 1), confirming their provenance from Dautzenberg's collection. Furthermore, the ledger at NMNZ states that the small collection was a donation by G.E. Mason. There is no known biographical information available about Mason (whose first name was likely George), other than that he was based in the UK and that he also donated specimens to the Naturalis Biodiversity Center (Leiden, the Netherlands) and the Natural History Museum (London, UK) (Mogollón Avila & Breure 2009). In any event, given the date, Mason likely received this material from Dautzenberg during the latter's lifetime (Dautzenberg died on 9 May 1935). Research at the Royal Belgian Institute of Natural Sciences, where Dautzenberg's collection and archives are now housed, confirmed that this material

never reached that museum (T. Backeljau, pers. comm., 24 December 2019).

In a few cases (e.g. NMNZ M.306040) the labels indicate that the specimens originally belonged to Bavay's collection, which was reportedly dispersed after his death (Dance 1966); it is known that Dautzenberg acquired part of this (Breure 2015). A few other labels still indicate other previous owners of the material, including Jules F. Mabile, Otto F. von Möllendorff and Henry A. Pilsbry (see below). It is uncertain whether the specimens belonged to Dautzenberg before being acquired by Mason, but that is likely given the uniformity of the label format.

Since several of these lots proved to contain type material, we present below an annotated and illustrated catalogue of all taxa present in this collection. The species are listed alphabetically according to their specific epithet, followed by information on their original description, type material, type locality, current taxonomic status (Nordsieck 2002a,b, 2007, 2011; Grego & Szekeres 2011; Schileyko 2011; MolluscaBase 2020), a transcript of the label, and further remarks where pertinent. A few specimens proved not to be types; they are listed and briefly discussed in the Appendix to provide a comprehensive overview of Dautzenberg's material in the NMNZ collection. Material of several species was listed in Fischer-Piette (1950) as the 'holotype', which according to Article 74.6 (International Commission on Zoological Nomenclature 1999) must be interpreted as the lectotype designation.

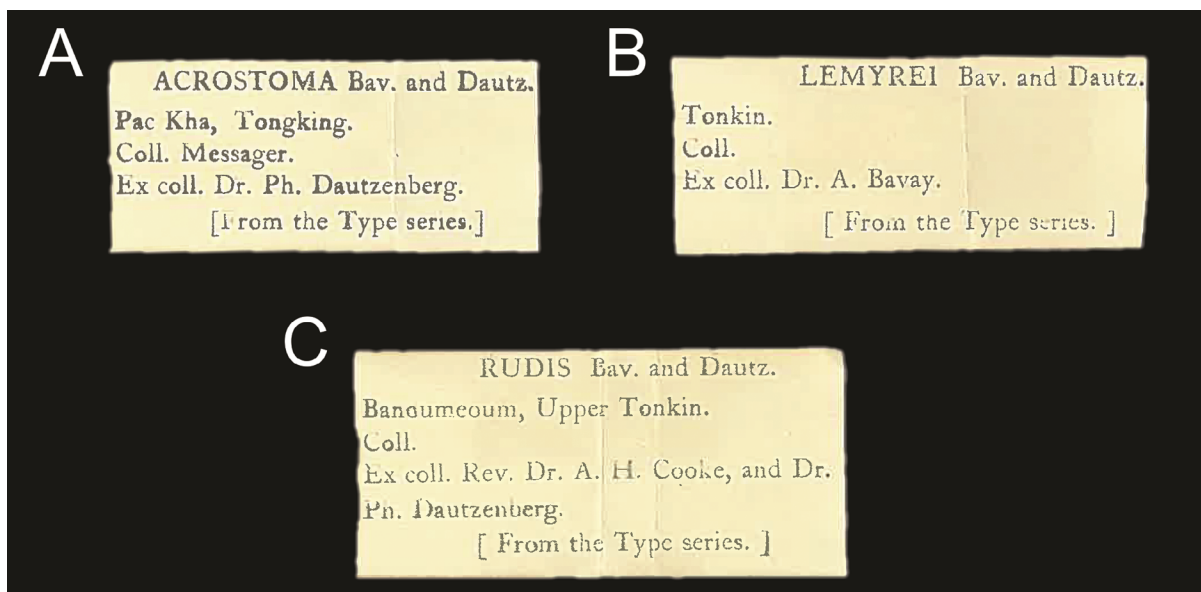


Fig. 1 Examples of original labels from the Dautzenberg material. A, *Clausilia acrostoma* Bavay & Dautzenberg, 1909, NMNZ M.306049; B, *C. lemyrei* Bavay & Dautzenberg, 1899, from Bavay's collection, NMNZ M.306040; C, example of an unpublished manuscript name, NMNZ M.329559.

INSTITUTIONAL ACRONYMS: ANSP, Academy of Natural Sciences, Drexel University (Philadelphia, USA); KIU, Kyoto University Museum (京都大学総合博物館; Kyoto, Japan); MNHN, Musée national d'Histoire naturelle (Paris, France); NMNZ, Museum of New Zealand Te Papa Tongarewa (Wellington, New Zealand); RBINS, Royal Belgian Institute of Natural Sciences (Brussels, Belgium).

Systematics

babeensis Bavay & Dautzenberg, 1899, *Clausilia* (Fig. 2B)

Clausilia babeensis Bavay & Dautzenberg, 1899b: 278, pl. 12, fig. 3.

TYPE MATERIAL: paralectotypes NMNZ M.202247 (2 shells, Messenger leg.).

LABEL: (not original) '*Clausilia babeensis* B. et D. Near Lake Ba Be, Tonkin. Coll. Messenger. Ex Dautzenberg Coll. From the type series.'

TYPE LOCALITY: 'dans un ilot de l'un des lacs Ba-Bé'. Vietnam, on a small island on Lake Ba Bé.

CURRENT TAXONOMY: Accepted as *Synprosphyra babeensis* (Bavay & Dautzenberg, 1899).

REMARKS: The label (not original) indicates only 'near Lake Ba Be' as the locality, and does not mention an island or islet. Fischer-Piette (1950: 167) listed one specimen (MNHN-IM-2000-2479) as the 'holotype', which is the lectotype designation. There are further paralectotypes in RBINS MT.2520 (9).

backanensis Bavay & Dautzenberg, 1899, *Clausilia* (Fig. 2C)

Clausilia backanensis Bavay & Dautzenberg, 1899b: 281, pl. 12, fig. 5.

TYPE MATERIAL: paralectotypes NMNZ M.202239 (6 shells, Messenger leg.).

LABEL: (not original) '*Clausilia backanensis* Bav. et Dautz. Bac Kan, Tonkin. Coll. Messenger. Ex Coll. Dautzenberg. From the type series.'

TYPE LOCALITY: 'Les environs de Bac-Kan'. Vietnam, Bắc Kạn.

CURRENT TAXONOMY: Junior synonym of *Phaedusa lypra* (Mabille, 1887).

REMARKS: Fischer-Piette (1950: 167) listed one specimen (MNHN-IM-2000-2406) as the 'holotype', which is the lectotype designation.

callistoma Bavay & Dautzenberg, 1899, *Clausilia* (Fig. 2D)

Clausilia callistoma Bavay & Dautzenberg, 1899b: 41, pl. 2, figs 3–3a.

TYPE MATERIAL: paralectotypes NMNZ M.202223 (2 shells, Messenger leg.).

LABEL: (not original) '*Clausilia callistoma* Bav. et Dautz. That Khe, Tong Kin. Coll. Lt.Col. Messenger. Ex Coll. Ph. Dautzenberg. From the type series.'

TYPE LOCALITY: 'De Lang-Son à That-Khé'. Vietnam, between Lạng Sơn and Thất Khê.

CURRENT TAXONOMY: Accepted as *Selenophaedusa callistoma* (Bavay & Dautzenberg, 1899).

REMARKS: Fischer-Piette (1950: 166) listed one specimen (MNHN-IM-2000-2409) as the 'holotype', which is the lectotype designation.

cristata Bavay & Dautzenberg, 1899, *Clausilia dorri* (Fig. 2E)

Clausilia (Pseudonenia) Dorri var. *δ. cristata* Bavay & Dautzenberg, 1899b: 283.

TYPE MATERIAL: possible paralectotypes NMNZ M.202227 (6 shells, Messenger leg.).

LABEL: (not original) '*Clausilia dorri* Bav. et Dautz. var. *cristata* Bav. et Dautz. Upper Tong Kin. Ex Coll. Ph. Dautzenberg. From the type series.'

TYPE LOCALITY: 'le voisinage des lacs Ba-Bé'. Vietnam, Lake Ba Bé.

CURRENT TAXONOMY: Accepted as *Tropidauchenia bavayi* (Lindholm, 1924), a substitute name for the preoccupied *cristata*.

REMARKS: The label, although not the original, gives only 'Upper Tongkin' as the collection locality, which is to the south of Lake Ba Bé. Bavay & Dautzenberg (1899b: 285) stated that specimens of all four varieties they described came from the vicinities of that lake. As such, the status of the present specimens as types remains uncertain. Fischer-Piette (1950: 167) listed a specimen (MNHN-IM-2000-2445) as a 'type' of the variety, which is here considered the lectotype designation. There is further type material in RBINS MT.2472 (25 paralectotypes).

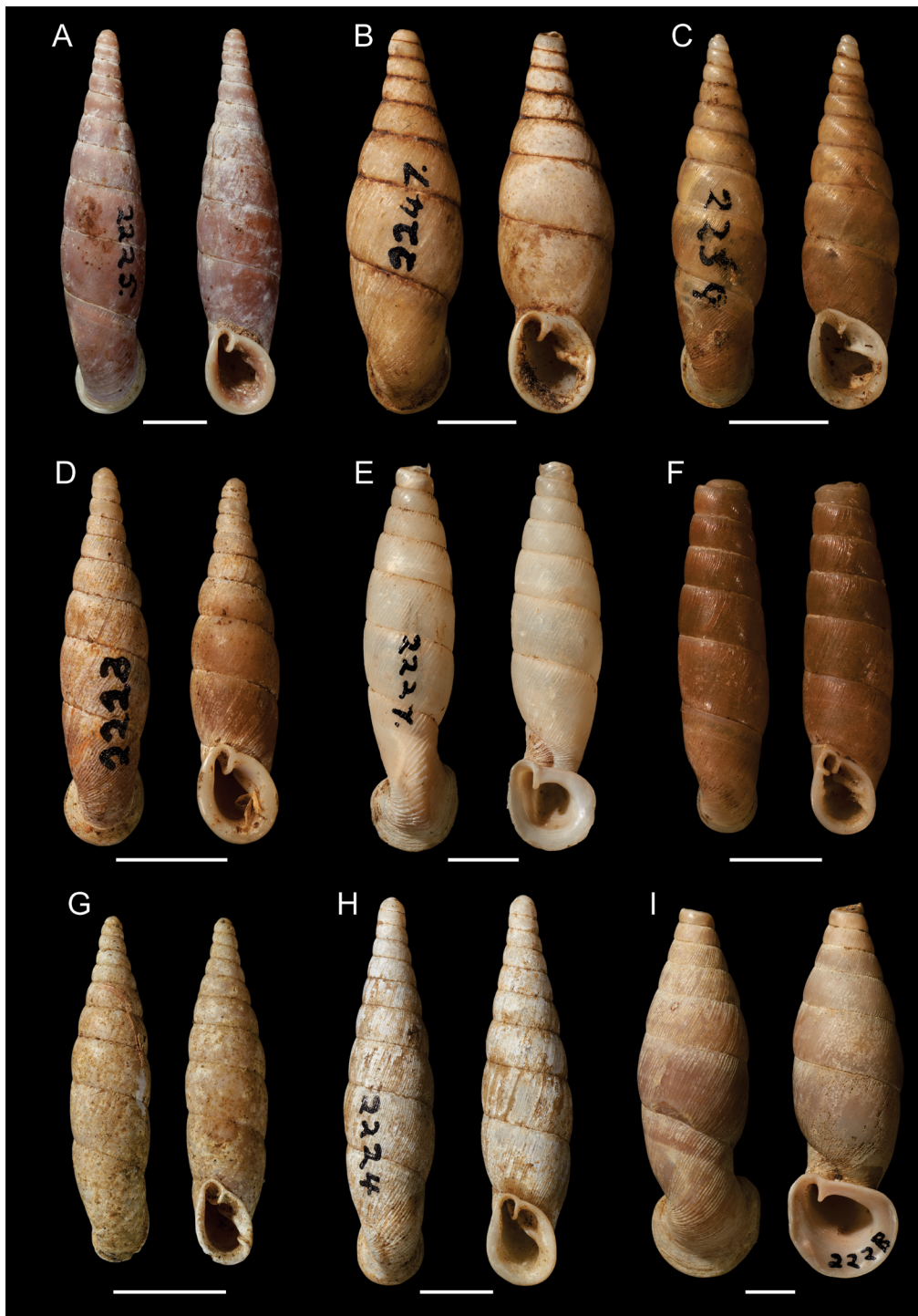


Fig. 2 Clausiliidae types from the NMNZ collection; scale bars = 5 mm. A, paralectotype of *Clausilia porphyrostoma* Bavay & Dautzenberg, 1909, NMNZ M.202225; B, paralectotype of *C. babeensis* Bavay & Dautzenberg, 1899, NMNZ M.202247; C, paralectotype of *C. backanensis* Bavay & Dautzenberg, 1899, NMNZ M.202239; D, paralectotype of *C. callistoma* Bavay & Dautzenberg, 1899, NMNZ M.202223; E, possible paralectotype of *C. dorri cristata* Bavay & Dautzenberg, 1899, and *C. bavayi* Lindholm, 1924, NMNZ M.202227; F, syntype of *C. duella* Mabile, 1887, NMNZ M.306046; G, paralectotype of *C. falcifera* Bavay & Dautzenberg, 1899, NMNZ M.306039; H, paralectotype of *C. fistulata* Bavay & Dautzenberg, 1909, NMNZ M.202224; I, syntype of *Garnieria goliath* H. Rolle, 1910, NMNZ M.202228.

***duella* Mabile, 1887, *Clausilia* (Fig. 2F)**

Clausilia duella Mabile, 1887a: 16.

TYPE SPECIMEN: syntype NMNZ M.306046 (1 shell, ex Mabile colln.).

LABEL: (original) 'DUELLA Mabile. Tonkin. Ex coll. Dr. Ph. Dautzenberg, and Dr. Mabile. [From the Type series.]'

TYPE LOCALITY: Vietnam, Tonkin.

CURRENT TAXONOMY: Accepted as *Dautzenbergiella duella* (Mabile, 1887).

REMARKS: One syntype, MNHN-IM-2000-2446, listed in Fischer-Piette (1950: 167) as a figured specimen by Bavay & Dautzenberg (1899a: pl. 1, fig. 7).

***falcifera* Bavay & Dautzenberg,
1899, *Clausilia* (Fig. 2G)**

Clausilia falcifera Bavay & Dautzenberg, 1899b: p. 290, pl. 12, fig. 10.

TYPE MATERIAL: paralectotypes NMNZ M.306039 (2 shells, Messenger leg.).

LABEL: (original) 'FALCIFEAR [sic] Bav. and Dautz. Bac Kan, Tongking. Coll. Messenger. Ex Coll. Dr. Ph. Dautzenberg. [From the type series.]'

TYPE LOCALITY: 'Entre Bac-Kan et That-Khé'. Vietnam, between Bắc Kạn and Thất Khê.

CURRENT TAXONOMY: Junior synonym of *Selenophaedusa billeti* (H. Fischer, 1898).

REMARKS: The label (original) mentions only Bắc Kạn as the locality. Fischer-Piette (1950: 167) listed one specimen (MNHN-IM-2000-2468) as the 'holotype', which is the lectotype designation.

***fistulata* Bavay & Dautzenberg,
1909, *Clausilia* (Fig. 2H)**

Clausilia fistulata Bavay & Dautzenberg, 1909: 92, pl. 2, figs 15–16.

TYPE MATERIAL: paralectotypes NMNZ M.202224 (4 shells, Messenger leg.).

LABEL: absent; only recent electronic database information available.

TYPE LOCALITY: 'Pac-Kha, Muong-Bo et Gia-Phu'. Vietnam, Bắc Hà, Mường Bô and Gia Phú.

CURRENT TAXONOMY: Accepted as *Synprosphyra fistulata* (Bavay & Dautzenberg, 1909).

REMARKS: Fischer-Piette (1950: 174) listed one specimen (MNHN-IM-2000-2471) as the 'holotype', which is the lectotype designation.

***goliath* H. Rolle, 1910, *Garnieria* (Fig. 2I)**

Garnieria goliath H. Rolle, 1910: 135, textfig.

TYPE MATERIAL: syntypes NMNZ M.202228 (3 shells, Demange leg. 1910, ex H. Rolle colln.).

LABEL: (not original) '*Clausilia goliath* Rolle. Phu-Ly Phongy, Tonkin. Coll. Demmge [sic], 1910. Ex Coll. H. Rolle. From the type series.'

TYPE LOCALITY: 'Tongking, inter Phu-ly et Ké-So'. Vietnam, between Phủ Lý and Kê Sở.

CURRENT TAXONOMY: Junior synonym of *Megalauchenia proctostoma* (Mabile, 1889).

REMARKS: The label (not original) gives only Phủ Lý as the locality, while the species description presents a broader type locality (from Phủ Lý to Kê Sở). Nor does the label mention Dautzenberg, although given the remaining material, it can be surmised the specimens came from his collection as well.

***grangeri* Bavay & Dautzenberg,
1899, *Clausilia* (Fig. 3A)**

Clausilia Grangeri Bavay & Dautzenberg, 1899a: 46, pl. 3, figs 8–8b.

TYPE MATERIAL: syntypes NMNZ M.202242 (3 shells and 1 fragmentary aperture, Messenger leg.).

LABEL: (not original) '*Clausilia grangeri* B. et D. That Khe, Tonkin. Coll. Messenger. Ex Coll. Dautzenberg. From the type series.'

TYPE LOCALITY: 'Entre Lang-Son et That-Khé'. Vietnam, between Lạng Sơn and Thất Khê.

CURRENT TAXONOMY: Accepted as *Siphonophaedusa grangeri* (Bavay & Dautzenberg, 1899).

REMARKS: Fischer-Piette (1950: 167) listed two syntypes (MNHN-IM-2000-2417).

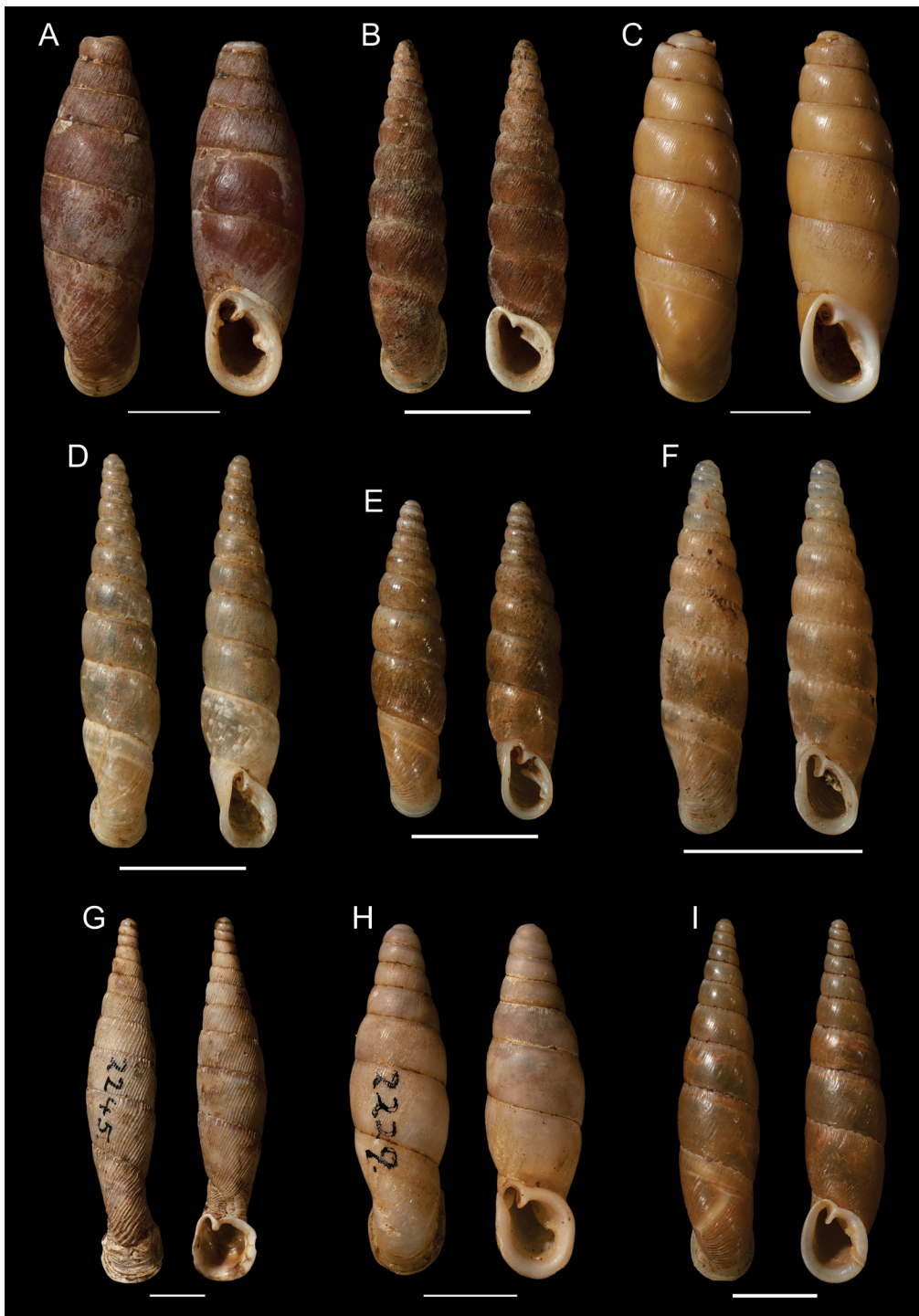


Fig. 3 Clausiliidae types from the NMNZ collection (cont.); scale bars = 5 mm. A, syntype of *Clausilia grangeri* Bavay & Dautzenberg, 1899, NMNZ M.202242; B, paralectotype of *C. inanis* Bavay & Dautzenberg, 1909, NMNZ M.306045; C, paralectotype of *C. lemyrei* Bavay & Dautzenberg, 1899, NMNZ M.306040; D, paralectotype of *C. mairei* Bavay & Dautzenberg, 1909, NMNZ M.202237; E, paralectotype of *C. mairei* Bavay & Dautzenberg, 1909, NMNZ M.306044 (in scale with specimen in Fig. 3D); F, paralectotype of *C. margaritifera* Bavay & Dautzenberg, 1909, NMNZ M.202243; G, paralectotype of *C. messengeri* Bavay & Dautzenberg, 1899, NMNZ M.202245; H, paralectotype of *C. moirati* Bavay & Dautzenberg, 1909, NMNZ M.202229; I, syntype of *Phaedusa gisota platyloma* Möllendorff, 1901, NMNZ M.306043.

***inanis* Bavay & Dautzenberg, 1909,
Clausilia (Fig. 3B)**

Clausilia inanis Bavay & Dautzenberg, 1909: 103, pl. 3, figs 15–16.

TYPE MATERIAL: paralectotypes NMNZ M.306045 (3 shells, Messenger leg.).

LABEL: (original) ‘INANIS B. and D. Pac Kha, Tongking. Coll. Messenger. Dr. Ph. Dautzenberg. [From the Type series.]’

TYPE LOCALITY: ‘Pac-Kha’. Vietnam, Bắc Hà.

CURRENT TAXONOMY: Accepted as *Phaedusa inanis* (Bavay & Dautzenberg, 1909).

REMARKS: Fischer-Piette (1950: 174) listed one specimen (MNHN-IM-2000-2494) as the ‘holotype’, which is the lectotype designation.

***lemyrei* Bavay & Dautzenberg, 1899,
Clausilia (Fig. 3C)**

Clausilia lemyrei Bavay & Dautzenberg, 1899b: 275, pl. 12, fig. 1.

TYPE MATERIAL: paralectotypes NMNZ M.306040 (2 shells, ex A.R.J.B. Bavay colln.).

LABEL: (original) ‘LEMYREI Bav. and Dautz. Tonkin. Coll. Ex coll. Dr. A. Bavay. [From the Type series.]’

TYPE LOCALITY: Not specifically given, but title refers to ‘Indo-Chine’.

CURRENT TAXONOMY: Accepted as *Hemiphaedusa lemyrei* (Bavay & Dautzenberg, 1899).

REMARKS: The label (original) gives Tonkin as the locality. Fischer-Piette (1950: 167) listed one specimen (MNHN-IM-2000-2500, from ‘That-Khé’) as the ‘holotype’, which is the lectotype designation.

***mairei* Bavay & Dautzenberg, 1909, *Clausilia*
(Figs 3D and 3E)**

Clausilia Mairei Bavay & Dautzenberg, 1909: 96, pl. 3, figs 1–2.

TYPE MATERIAL: paralectotypes NMNZ M.202237 (2 shells, Messenger leg.), NMNZ M.306044 (2 shells, Messenger leg.).

LABELS: NMNZ M.202237 (not original) – ‘*Clausilia mairei* Bav. et Dau. Pac Kha, Tonkin. Coll. Messenger. Ex Coll. Ph. Dautzenberg. From the type series.’; NMNZ M.306044 (original) – ‘MAIREI B. and D. Lao Kay. Coll. Messenger. Dr. Ph. Dautzenberg. [From the Type series.]’.

TYPE LOCALITY: ‘province de Lao-Kay et toute du rive droite du Fleuve rouge’. Vietnam, Lào Cai province, entire right bank of Red River.

CURRENT TAXONOMY: Accepted as *Oospira mairei* (Bavay & Dautzenberg, 1909).

REMARKS: The label (not original) of lot NMNZ M.202237 brings a more specific locality within Lào Cai province, namely Pác Kha. This is an old name for Bắc Hà (c. 908 m, 22.53911 N, 104.29305 E). The label of the other lot, NMNZ M.306044, is original and indicates only Lào Cai province as the locality. It is uncertain why these lots are separated, but the specimens from lot NMNZ M.202237 display an eroded periostracum and more slender shells (compare Figs 3D and 3E). Fischer-Piette (1950: 171) listed one specimen (MNHN-IM-2000-2705) as the ‘holotype’, which is the lectotype designation.

FURTHER SPECIMENS: NMNZ M.202235 (23 shells, Vietnam, Red River, right bank between Cam Đường and Làng Bo, Messenger leg.). Its label (not original) bears the manuscript name ‘*Clausilia suturalis* Bav & Dautz’, which was never published. The specimens, however, belong in *Oospira mairei*.

***margaritifera* Bavay & Dautzenberg,
1909, *Clausilia* (Fig. 3F)**

Clausilia margaritifera Bavay & Dautzenberg, 1909: 102, pl. 3, figs 13–14.

TYPE MATERIAL: paralectotypes NMNZ M.202243 (12 shells, Messenger leg.).

LABEL: (not original) ‘*Clausilia margaritifera* Bav. D. Lao Kay, Tonkin. Coll. Messenger. Ex Coll. Dautzenberg. From the type series.’

TYPE LOCALITY: ‘Muong-Hum et Nat-Son’. Vietnam, Mường Hum; Nhật Sơn.

CURRENT TAXONOMY: Accepted as *Margaritiphaedusa margaritifera* (Bavay & Dautzenberg, 1909).

REMARKS: The label (not original) gives only Lào Cai province as the locality, which includes the type localities. Fischer-Piette (1950: 174) listed one specimen (MNHN-IM-2000-2508) as the ‘holotype’, which is the lectotype designation.

***messengeri* Bavay & Dautzenberg,
1899, *Clausilia* (Fig. 3G)**

Clausilia (*Pseudonenia*) *Messengeri* Bavay & Dautzenberg, 1899a: 47, pl. 3, figs 1–1b.

TYPE MATERIAL: paralectotypes NMNZ M.202245 (2 shells, Messenger leg.).

LABEL: (not original) ‘*Clausilia messengeri* B. et D. That Khe, Tonkin. Coll. Messenger. Ex Coll. Dautzenberg. From the type series.’

TYPE LOCALITY: ‘Entre Lang-Son et That-Khé’. Vietnam, between Lạng Sơn and Thất Khê.

CURRENT TAXONOMY: Accepted as *Tropidauchenia orientalis messengeri* (Bavay & Dautzenberg, 1899).

REMARKS: The label (not original) gives only Thất Khê as the locality. Fischer-Piette (1950: 167) listed one specimen (MNHN-IM-2000-2640) as the ‘holotype’, which is the lectotype designation.

***moirati* Bavay & Dautzenberg,
1909, *Clausilia* (Fig. 3H)**

Clausilia Moirati Bavay & Dautzenberg, 1909: 100, pl. 3, figs 10–11.

TYPE MATERIAL: paralectotype NMNZ M.202229 (1 shell, Messenger leg., ex A.R.J.B. Bavay colln.).

LABEL: (not original) ‘*Clausilia moirati* Bav. et Dautz. Tong Kin. Ex Coll. A. Bavay. From the type series.’

TYPE LOCALITY: ‘Pac-Kha, Muong-Bo et Binh-Lu’. Vietnam, Bắc Hà, Mường Bô and Bình Lư.

CURRENT TAXONOMY: Accepted as *Synprosphyra moirati* (Bavay & Dautzenberg, 1909).

REMARKS: Fischer-Piette (1950: 174) listed one specimen (MNHN-IM-2000-2642) as the ‘holotype’, which is the lectotype designation.

FURTHER SPECIMENS: NMNZ M.329559 (1 shell, ‘Banoumeoun, Upper Tonkin’, ex Rev. A.H. Cooke colln.). The label (original) gives the manuscript name ‘*rudis* Bav. and Dautz.’ (genus ‘*Clausilia*’ is supposedly implicit), which was never published (Fig. 1C). The specimens, however, belong in *Synprosphyra moirati*.

***platyloma* Möllendorff, 1901,
Phaedusa gisota (Fig. 3I)**

Phaedusa (*Hemiphaedusa*) *gisota platyloma* Möllendorff, 1901: 79.

TYPE MATERIAL: syntypes NMNZ M.306043 (2 shells, ex Möllendorff colln.).

LABEL: (original) ‘GISOTA Bav. and Dautz. Var. PLATYLOMA Mollff. Tongkin. Coll. Ex coll. Dautzenberg, and von Mollendorf. [From the Type series.]’

TYPE LOCALITY: ‘Than-moi’. Vietnam, Làng Thanh (formerly Thanh Mội).

CURRENT TAXONOMY: Junior synonym of *Notoptychia polydona* (Mabille, 1887).

REMARKS: The label (original) gives only Tonkin as the locality.

***porphyrostoma* Bavay & Dautzenberg,
1909, *Clausilia* (Fig. 2A)**

Clausilia porphyrostoma Bavay & Dautzenberg, 1909: 87, pl. 2, figs 5–6.

TYPE MATERIAL: paralectotypes NMNZ M.202225 (3 shells, Vietnam, Bắc Hà, Messenger leg.).

LABEL: (not original) ‘*Clausilia porphyrostoma* Bav. et Dautz. Pac Kha, Tongkin. Coll. Lt. Col. Messenger. Ex Coll. Ph. Dautzenberg. From the type series.’

TYPE LOCALITY: ‘région de Lao-Kay’. Vietnam, Lào Cai province.

CURRENT TAXONOMY: Accepted as *Selenophaedusa porphyrostoma* (Bavay & Dautzenberg, 1909).

REMARKS: Fischer-Piette (1950: 175) listed one specimen (MNHN-IM-2000-2661) as the ‘holotype’, which is the lectotype designation; five further paralectotypes are in RBINS (RBINS MT.2479).

sykesi Bavay & Dautzenberg,
1899, *Clausilia* (Fig. 4A)

Clausilia Sykesi Bavay & Dautzenberg, 1899b: 293, pl. 12, figs 12–13.

TYPE MATERIAL: paralectotypes NMNZ M.202244 (4 shells, Messenger leg.).

LABEL: (not original) ‘*Clausilia sykesi* B. et D. Bac Kan, Tonkin. Coll. Messenger. Ex Coll. Dautzenberg. From the type series.’

TYPE LOCALITY: ‘Bac-Kan’. Vietnam, Bắc Kạn.

CURRENT TAXONOMY: Accepted as *Leptocochlea sykesi* (Bavay & Dautzenberg, 1899).

REMARKS: Fischer-Piette (1950: 167) listed one specimen (MNHN-IM-2000-2684) as the ‘holotype’, which is the lectotype designation.

tantilla Pilsbry, 1902, *Clausilia* (Fig. 4B)

Clausilia (Hemiphaedusa) tantilla Pilsbry, 1902: 655.

TYPE MATERIAL: paralectotypes NMNZ M.329558 (2 shells, Y. Hirase leg.).

TYPE LOCALITY: ‘Goto, Uzen’. The type locality given by Pilsbry (1902) is uncertain, as it could refer to: (1) the Gotō Islands in Nagasaki prefecture; (2) Mt Unzen, also in Nagasaki prefecture (near Shimabara) but not on Gotō islands; or (3) Uzen province, an old province name in northern Japan, now part of Yamagata prefecture. The actual locality can be ascertained by looking into further material from Hirase Conchological Museum, now housed at KIU. The label of

the lot of *Clausilia tantilla* (KIU 1730) has the locality noted as ‘五島’, which is the Gotō Islands, Nagasaki prefecture (S. Ishida, pers. comm., 15 January 2020).

CURRENT TAXONOMY: Accepted as *Zaptyx tantilla* (Pilsbry, 1902).

REMARKS: The lectotype (Baker 1963: 214) and a lot with paralectotypes are deposited in the ANSP collection under register numbers ANSP 83023 and ANSP 453959, respectively. The present specimens are thus further paralectotypes.

thatkheana Bavay & Dautzenberg,
1899, *Clausilia* (Fig. 4C)

Clausilia thatkheana Bavay & Dautzenberg, 1899b: 285, pl. 12, fig. 7.

TYPE MATERIAL: paralectotypes NMNZ M.202236 (2 shells, Messenger coll.).

LABEL: (not original) ‘*Clausilia thatkeana* [sic] Bav. et Dautz. That Khe, Tonkin. Coll. Messenger. Ex Coll. Dautzenberg. From the type series.’

TYPE LOCALITY: ‘Les environs de That-Khé’. Vietnam, Thất Khê.

CURRENT TAXONOMY: Accepted as *Selenophaedusa thatkheana* (Bavay & Dautzenberg, 1899).

REMARKS: Fischer-Piette (1950: 167) listed one specimen (MNHN-IM-2000-2689) as the ‘holotype’, which is the lectotype designation.

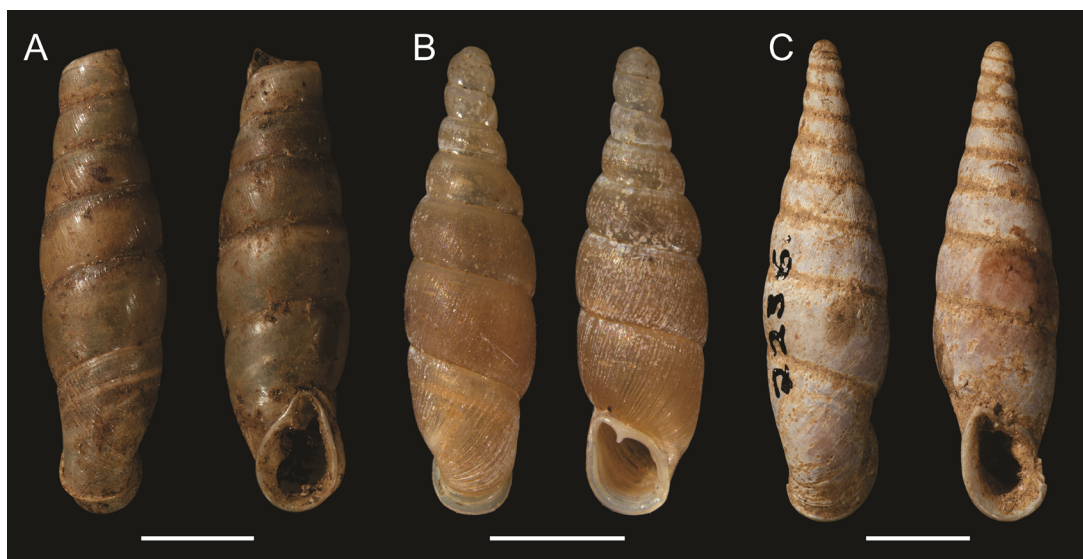


Fig. 4 Clausiliidae types from the NMNZ collection (cont.). A, paralectotype of *Clausilia sykesi* Bavay & Dautzenberg, 1899, NMNZ M.202244; scale bar = 3 mm; B, paralectotype of *C. tantilla* Pilsbry, 1902, NMNZ M.329558; scale bar = 1 mm; C, paralectotype of *C. thatkheana* Bavay & Dautzenberg, 1899, NMNZ M.202236; scale bar = 5 mm.

Concluding remarks

The present specimens from Dautzenberg's collection (including types of 19 taxa and possible type material of one taxon) remained hidden for several decades within the NMNZ collection cabinets. Not even the published list of that institution's molluscan type material (Marshall 1996) mentioned them. Although naturally focused on New Zealand and the Pacific, the NMNZ collection has a wealth of international land snails, mostly obtained in the late nineteenth and early twentieth centuries. Even though the purpose of this collection then was to include representative material from all families and biogeographic regions, there is still a wealth of information locked away in it (e.g. Salvador 2019). We expect that further studies in this collection (and similar collections in other museums) will reveal more lost treasures, which need to be made available to a broader audience through publication and digitisation.

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References

- Baker, H.B. (1963). Type land snails in the Academy of Natural Sciences of Philadelphia. Part II. Land Pulmonata, exclusive of North America north of Mexico. *Proceedings of the Academy of Natural Sciences of Philadelphia* 115: 191–259.
- Bavay, A.R.J.B. and Dautzenberg, P. (1899a). Description de coquilles Nouvelles de l'Indo-Chine. *Journal de Conchyliologie* 47(1): 28–55, pls 1–3.
- Bavay, A.R.J.B. and Dautzenberg, P. (1899b). Description de coquilles nouvelles de l'Indo-Chine (Suite). *Journal de Conchyliologie* 47(4): 275–296, pl. 12.
- Bavay, A.R.J.B. and Dautzenberg, P. (1904). Description de coquilles nouvelles de l'Indo-Chine. (3e suite). *Journal de Conchyliologie* 51(3) [1903]: 201–236, pls 7–9.
- Bavay, A.R.J.B. and Dautzenberg, P. (1909). Description de coquilles nouvelles de l'Indo-Chine (4e Suite). *Journal de Conchyliologie* 57(2): 81–105, pls 2–3.
- Breure, A.S.H. (2015). The malacological handwritings in the autograph collection of the Ph. Dautzenberg archives, Brussels. *Folia Conchyliologica* 33: 1–111.
- Breure, A.S.H. and Ablett, J.D. (2016). The 'Demange drawings': known and unknown malacological contributions of Victor Demange (1870–1940). *Folia Conchyliologica* 36: 1–9.
- Breure, A.S.H. and Páll-Gergely, B. (2019). More than just a name: Colonel Messager and his correspondents. *Zoosystema* 41(2): 7–19.
- Dance, P. (1966). *Shell collecting: an illustrated history*. Berkeley, CA: University of California Press. 344 pp.
- Duchamps, R. (1986). Philippe Dautzenberg. *Apex* 1(2): 47–66, pls 1–3.
- Duchamps, R. (1989). Philippe Dautzenberg: son oeuvre, sa collection. *Annales de la Société Royale Zoologique de Belgique* 119(2): 215–222.
- Fischer, H. (1898). Notes sur la faune du Haut Tonkin. III. Liste des mollusques recueillis par le Dr. A. Billet. *Bulletin scientifique de la France et de la Belgique* 28: 310–338, pls 17–18.
- Fischer-Piette, E. (1950). Liste des types décrits dans le Journal de Conchyliologie et conservés dans la collection de ce Journal (Suite). *Journal de Conchyliologie* 90: 149–179.

- Gredler, V. (1884). Zur Conchylien-Fauna von China. VI. Stück. *Archiv für Naturgeschichte* 50(2): 257–280.
- Grego, J. and Szekeres, M. (2011). New taxa of Asiatic Clausiliidae (Mollusca: Gastropoda). *Visaya* 3: 4–22.
- Heude, P.M. (1885). Notes sur les mollusques terrestres de la vallée du Fleuve bleu. *Mémoires de l'Histoire naturelle de l'Empire chinois* 1(3): 89–132, pls 22–32.
- International Commission on Zoological Nomenclature. (1999). *International Code of Zoological Nomenclature*. 4th edn. Retrieved on 20 January 2020 from <https://www.iczn.org/the-code-of-zoological-nomenclature/the-code-online>.
- Johnson, R.I. (1973). *Heude's molluscan types: or, Asian land and fresh water mollusks, mostly from the People's Republic of China, described by P.M. Heude*. Special Occasional Publication, Museum of Comparative Zoology 1. Cambridge, MA: Museum of Comparative Zoology. 111 pp.
- Lamy, E. (1935). Nécrologie. Philippe Dautzenberg (1849–1935). *Journal de Conchyliologie* 79(2): 183–203.
- Lindholm, W.A. (1924). A revised systematic list of the genera of the Clausiliidae, recent and fossil, with their subdivisions, synonymy, and types. *Proceedings of the Malacological Society of London* 16(1): 53–80.
- Mabille, J. (1887a). *Molluscorum tonkinorum diagnoses*. Meulan: A. Masson. 18 pp.
- Mabille, J. (1887b). Sur quelques mollusques du Tonkin. *Bulletins de la Société Malacologique de France* 4: 73–164.
- Mabille, J. (1889). *Contributions à la faune malacologique du Tonkin*. Meulan: A. Masson. 20 pp.
- Marshall, B.A. (1996). Molluscan name-bearing types in the Museum of New Zealand Te Papa Tongarewa. *Tuhinga* 9: 1–85.
- Mogollón Avila, V. and Breure, A.S.H. (2009). José Julián Bravo (1874–1927), a hitherto unknown conchologist from Peru. *Zoologische Mededelingen* 83: 601–613.
- Möllendorff, O. von. (1901). Diagnosen neuer von H. Fruhstorfer in Tongking gesammelter Landschnecken. *Nachrichtsblatt der deutschen Malakozoologischen Gesellschaft* 33: 65–81.
- MolluscaBase (2019). MolluscaBase [online database]. Retrieved in December 2019 from <http://www.molluscabase.org>.
- Morlet, L. (1892). Description d'espèces nouvelles provenant de l'Indo-Chine. *Journal de Conchyliologie* 40: 315–329.
- Nordsieck, H. (2002a). Annotated check-list of the South East Asian Phaedusinae, with the description of new taxa (Gastropoda, Pulmonata, Clausiliidae). *Basteria* 66(1/3): 85–100.
- Nordsieck, H. (2002b). Revision of the Garnieriinae (Gastropoda: Stylommatophora: Clausiliidae), with description of new taxa. *Stuttgarter Beiträge zur Naturkunde A* 640: 1–23.
- Nordsieck, H. (2007). *Worldwide door snails*. Hackenheim: ConchBooks. 214 pp.
- Nordsieck, H. (2011). Clausiliidae of Vietnam with the description of new taxa (Gastropoda: Stylommatophora). *Archiv für Molluskenkunde* 140: 149–173.
- Pfeiffer, L. (1841) *Symbolae ad historiam Heliceorum*. Sectio prima. Kassel: Th. Fischer. 88 pp.
- Pilsbry, H.A. (1902). Catalogue of the Clausiliidae of the Japanese Empire. *Proceedings of the Academy of Natural Sciences of Philadelphia* 53 [1901]: 647–656.
- Rolle, F.H. (1910). Eine neue *Garnieria*. *Nachrichtsblatt der Deutschen Malakozoologischen Gesellschaft* 42: 135–136.
- Roth, B. and Clover, P.W. (1973). A review of the Marginellidae described by Bavay, 1903–1922. *The Veliger* 16(2): 207–215.
- Salvador, R.B. (2019). Brazilian, Uruguayan and Argentinian gastropods in the collection of the Museum of New Zealand Te Papa Tongarewa. *Tuhinga* 30: 82–98.
- Schileyko, A.A. (2011). Check-list of land pulmonate molluscs of Vietnam (Gastropoda: Stylommatophora). *Ruthenica* 21(1): 1–68.
- Sykes, E.R. (1895). Descriptions of new *Clausiliæ* from Japan and Yunnan. *Proceedings of the Malacological Society of London* 1: 261–263.

Appendix

The following specimens belong to the Dautzenberg collection in the NMNZ, but do not represent type material (despite some of them having 'From the type series' written on their labels). They are presented below in a similar, albeit more simplified, manner to the main text, arranged alphabetically by genus name.

Dautzenbergiella duella (Mabille, 1887)

Clausilia duella Mabille, 1887a: 16.

SPECIMEN: NMNZ M.330021 (1 shell, Vietnam, Tonkin, Messenger leg.).

REMARKS: Despite the presence of type material of this species in the NMNZ Dautzenberg collection (see above), the present specimen lacks the note 'From the Type Series'.

Formosana pacifica (Gredler, 1884)

Clausilia (*Phaedusa*) *pacifica* Gredler, 1884: 274, pl. 19, fig. 7.

SPECIMENS: NMNZ M.330023 (2 shells, China, Hubei).

Grandinenia ardouiniana (Heude, 1885)

Clausilia ardouiniana Heude, 1885: 118, pl. 31, fig. 1.

SPECIMENS: NMNZ M.306041 (1 shell, Vietnam, Hà Long Bay, Vathelet leg., ex Heude colln.), NMNZ M.306047 (2 shells, Vietnam, Tonkin Gulf, 'Tung Nam', Demange leg.), NMNZ M.306048 (1 shell, Vietnam, Tonkin Gulf, Demange leg.).

REMARKS: There is indication on the label (original) that the specimen NMNZ M.306041 belonged to Heude's collection. However, neither the locality (Hà Long Bay, as 'Along Bay') nor the collector (Vathelet) given on the label match those on the original species description 'Ad rupes sinus Tonquini' and 'Ardouin', respectively (Heude 1885). As such, there is little evidence to consider this specimen a type. Johnson (1973) pointed out that paratypes of this species are housed in the Smithsonian National Museum of Natural History (Washington, DC, USA) and Museum of Comparative Zoology (Cambridge, USA), but offered no information about the holotype. Lots NMNZ M.306047 and NMNZ M.306048, however, did not belong to Heude's collection. Instead, they have only indications of belonging to Dautzenberg collection and bear, respectively, the name 'ardouiniana Heude Var. minor Bav. And Dautz.' (likely referring to *ardouiniana* var. *minor* Dautzenberg & Fischer, 1905) and the unpublished manuscript name 'ardouiniana Heude Var. tenuis Bav. And Dautz.'. These specimens, however, belong in the nominate *Grandinenia ardouiniana*.

Liparophaedusa auregani

(Bavay & Dautzenberg, 1904)

Clausilia Auregani Bavay & Dautzenberg, 1904: 213, pl. 9, figs 9–11.

SPECIMEN: NMNZ M.202241 (1 shell, Messenger leg.).

REMARKS: Bavay & Dautzenberg (1904) introduced this taxon as a replacement name for *Clausilia fargesiana* Mabille, 1887 [non Heude, 1885]. The taxon is thus based on the material that Mabille had at hand (collected by Balansa) for the description. Fischer-Piette (1950: 171) listed one specimen (MNHN-IM-2000-2414) as the 'holotype'; however, it was the specimen figured by Bavay & Dautzenberg (1904). The present specimen therefore has no type status.

Megalauchenia proctostoma (Mabille, 1889)

Clausilia proctostoma Mabille, 1889: 13.

SPECIMEN: NMNZ M.306042 (1 shell, Vietnam, Tan Phong Island, Demange leg.).

REMARKS: Mabille (1889) described this taxon on the basis of material collected by Balansa in 'Tonkin' (syntypes MNHN-IM-2000-2662, MNHN-IM-2000-2663; Fischer-Piette 1950). The present material, therefore, does not belong to the type series. Furthermore, the locality of the present specimen is outside the species' known distribution.

Notoptychia polydona (Mabille, 1887)

Clausilia polydona Mabille, 1887b: 114.

SPECIMENS: NMNZ M.330018 (2 shells, Vietnam, Tonkin, ex H.C. Fulton colln.).

Oospira javana (L. Pfeiffer, 1841)

Clausilia javana L. Pfeiffer, 1841: 49.

SPECIMENS: NMNZ M.330022 (2 shells, Java, ex H.C. Fulton colln.).

Oospira vanbuensis
(Bavay & Dautzenberg, 1899)

Clausilia vanbuensis Bavay & Dautzenberg, 1899a: 38, pl. 2, figs 1–1b.

SPECIMENS: NMNZ M.202238 (2 shells, Vietnam, Vanbu, Messenger leg.).

REMARKS: The original description mentioned R. Bavay as the collector (Bavay & Dautzenberg 1899a: 39). The present specimens, however, were collected by Messenger, as were most others. As such, the present specimens are from the type locality (route from Sơn La to ‘Van-Bu’) but probably from a later date and, thus, are unlikely to be types.

***Phaedusa bocki* (Sykes, 1895)**

Clausilia (Pseudonenia) bocki Sykes, 1895: 263, fig. 1.

SPECIMENS: NMNZ M.329560 (2 shells, China, SE Yunnan, Carl Bock leg., ex Hugh C. Fulton colln.).

REMARKS: The label (original) mentions only that the specimens belonged to Fulton’s collection, and does not list Sykes. Furthermore, even though Sykes (1895) named his new species after Bock, he does not mention him specifically as the collector. Finally, the type locality given by Sykes (1895) is more specific: ‘Mang-hao, or Mon-hao, S.E. Yunnan’. As such, the present specimens are not likely to be type material.

***Phaedusa inanis* (Bavay & Dautzenberg, 1909)**

Clausilia inanis Bavay & Dautzenberg, 1909: 103, pl. 3, figs 15–16.

SPECIMEN: NMNZ M.330019 (1 shell, Vietnam, Lào Cai).

REMARKS: Despite the presence of type material of this species in the NMNZ Dautzenberg collection (see above), the present specimen lacks the note ‘From the Type series’.

***Phaedusa paviei* (Morlet, 1892)**

Clausilia Paviei Morlet, 1892: 319.

SPECIMENS: NMNZ M.202226 (5 shells, Vietnam, Mùròng Hum, Messenger coll.); NMNZ M.202240 (3 shells, Vietnam, Thất Khê, Messenger leg.); NMNZ M.202248 (8 shells, Vietnam, Mùròng Hum, Messenger leg.), NMNZ M.330017 (1 shell, Vietnam, Mỹ Sơn, ex A. Bavay colln.).

REMARKS: The labels (both not original) of lot NMNZ M.202240 and NMNZ M.202248, respectively, give the manuscript names ‘*Clausilia grangeri pallida*’ and ‘*Clausilia tonkiniana* Bav & Dautz’, which were never published. The specimens, however, belong in *Phaedusa paviei*.

***Selenophaedusa billeti* (H. Fischer, 1898)**

Clausilia billeti H. Fischer, 1898: 324, pl. 18, figs 28–31.

SPECIMENS: NMNZ M.330015 (2 shells, Vietnam, Tonkin, ex H.C. Fulton colln.).

Synprosphyra acrostoma
(Bavay & Dautzenberg, 1909)

Clausilia acrostoma Bavay & Dautzenberg, 1909: 90, pl. 2, figs 13–14.

SPECIMENS: NMNZ M.306049 (2 shells, Vietnam, Bắc Hà, Messenger leg.).

REMARKS: The specimens are not from the type locality (Gia Phú) and as such they are not type, despite the label bearing a ‘From the Type series’ note. Fischer-Piette (1950: 174) mentioned one specimen (MNHN-IM-2000-2401) as the ‘holotype’, which is the lectotype designation.

Synprosphyra suilla
(Bavay & Dautzenberg, 1909)

Clausilia suilla Bavay & Dautzenberg, 1909: 88, pl. 2, figs 7–8.

SPECIMENS: NMNZ M.306051 (5 shells, Vietnam, Trịnh Tường, Messenger leg.), NMNZ M.330016 (1 shell, Vietnam, Cam Đường, ex A.H. Cooke colln.).

REMARKS: The specimens from lot NMNZ M.306051 are not from the type localities (Mùròng Bô and Bình Lư), and are instead from Trịnh Tường, c. 200 km north of Mùròng Bô and c. 50 km north of Bình Lư. As such, they do not represent type material. Fischer-Piette (1950: 174) mentioned one specimen (MNHN-IM-2000-2701) as the ‘holotype’, which is the lectotype designation; five further paralectotypes are in RBINS (RBINS MT.2476).

***Tropidauchenia bavayi* (Lindholm, 1924)**

Clausilia bavayi Lindholm, 1924: 57.

SPECIMENS: NMNZ M.202232 (2 shells, Vietnam, Chộ Bờ, Messenger leg.), NMNZ M.330011 (2 shells, Vietnam, region of Phủ Lý and Kê Sở, Tonkin, ex H. Rolle colln.), NMNZ M.330012 (1 shell, Vietnam, mountains of Lake Ba Bể, ex A.H. Cooke colln.), NMNZ M.330013 (4 shells, Vietnam, mountains of Lake Ba Bể, ex A.H. Cooke colln.).

REMARKS: The label (not original) of lot NMNZ M.202232 indicates it is a type specimen. However, its locality (Chộ Bờ) does not match the species type locality (vicinity of Lake Ba Bể; see above) and therefore it is not type material.

***Tropidauchenia giardi* (H. Fischer, 1898)**

Clausilia Giardi H. Fischer, 1898: 323, textfig. 2, pl. 18, figs 22–27.

SPECIMENS: NMNZ M.202231 (6 shells, Vietnam, Lang Son, Messenger leg., ex H. Fischer colln.), NMNZ M.330014 (2 shells, Vietnam, Thất Khê, Messenger leg., ex H. Rolle colln.), NMNZ M.330020 (2 shells, Vietnam, Long Phú, ex H. Rolle colln.).

REMARKS: The label (not original) states the specimens belong to the type series and that they belonged to Fischer's collection. However, both the collector (Messenger) and the locality (Lang Son) noted on the label do not match the original descriptions (Billet and Đèo Ma Phúc respectively). As such, the present specimens almost certainly do not represent type material.

***Tropidauchenia orientalis* (Mabille, 1887)**

Nenia orientalis Mabille, 1887a: 17.

SPECIMENS: NMNZ M.306050 (2 shells, Vietnam, Tonkin, 'Tpan Mai', ex A.R.J.B. Bavay colln.).

REMARKS: The label (original) mentions only that the specimens belonged to Bavay's collection and does not list Mabille's collection (as was the case for *Dautzenbergiella duella*, above). As such, the present specimens are not likely to be type material.